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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,409

07/18/2003

I-TSENG LEE

10672-US-PA

1408

31561

7590

04/14/2004

EXAMINER

HA, NATHAN W

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,409	Applicant(s) LEE ET AL.	
	Examiner Nathan W. Ha	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn et al., US 6,580,167, previously cited, hereinafter, Glenn.

In regard to claims 1, 7, 12, and 18, in fig. 5, Glenn discloses a stack chip package structure, comprising:

a carrier 102 with a carrier surface and a plurality of bonding pads 110A, wherein the bonding pads are set up on the carrier surface;

a die 104 with an active surface and a back surface, wherein the back surface of the die is in contact with the carrier surface of the carrier and the active surface of the die has a plurality of metal pads 108A thereon;

an adhesive layer 132 on the active surface of the die;

a thermal conductive block 136 with a bonding surface for attaching to the active surface of the die through the adhesive layer 132, wherein the bonding surface includes a central surface and a plurality of peripheral surfaces

surrounding the central surface, wherein the peripheral surfaces are further away from the active surface of the die than the central surface relatively, and that the peripheral surfaces and the central surface are on non-coplanar planes;

a plurality of conductive wires 112A electrically connecting each metal pad to a corresponding bonding pad; and a molding compound enclosing the die, the thermal conductive block and the conductive wires.

In regard to claims 2 and 8, and 13, wherein the peripheral surfaces are ladder, see fig. 5.

In regard to claims 3, 10, and 14, wherein thickness of the adhesive layer between the peripheral surface and the active surface of the die is greater than the adhesive layer between the central surface and the active surface of the die since layer 160 between the block and the die can be adhesive layer.

In regard to claims 4 and 19, wherein the carrier is a substrate.

In regard to claims 5, 11, and 15 the substrate including:

a die pad for stacking over sequentially a die and a thermal conductive block;

and a plurality of leads having a bonding pad on one end of the leads for attaching a conductive wire, see discussions above and fig.5.

In regard to claim 6, wherein the thermal conductive block a metal block.

In regard to claim 9, wherein the molding compound exposes the back surface of the die; see fig. 5.

In regard to claim 17, wherein the stack structure includes a functional die 104.

Response to Arguments

3. Applicant's arguments filed 2/17/04 have been fully considered but they are not persuasive. For instance, Applicant allegedly contend that the cited art, Glenn, does not disclose "the bonding surface of the thermal conductive block [that] includes a central surface and a plurality of the peripheral surfaces surrounding the central surface, and the central surface and the peripheral surfaces are attached to the active surface of the die through the adhesive layer." It is noted that these features upon which applicants rely are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

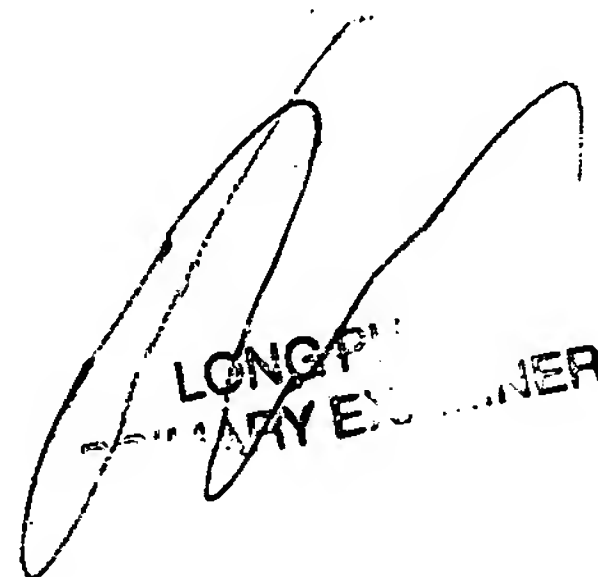
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Nathan Ha
November 24, 2003



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